

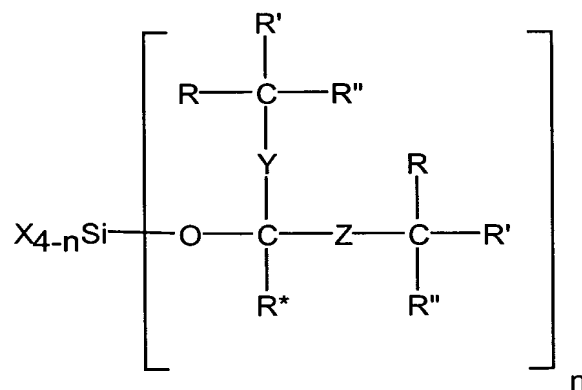
WHAT IS CLAIMED IS:

1. A modified silane compound consisting of a silane having 3 or 4 acetal moieties bonded thereto.

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2. A modified silane compound consisting of a silane having 2 acetal moieties bonded thereto with the proviso that the silane compound does not contain a methyl, ethyl, or phenyl group if the silane compound has the following structure:

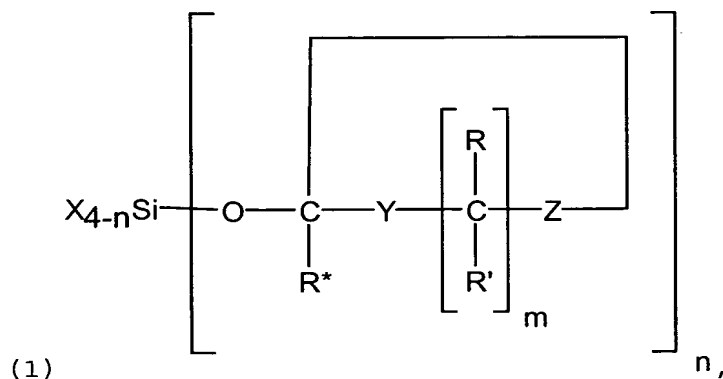
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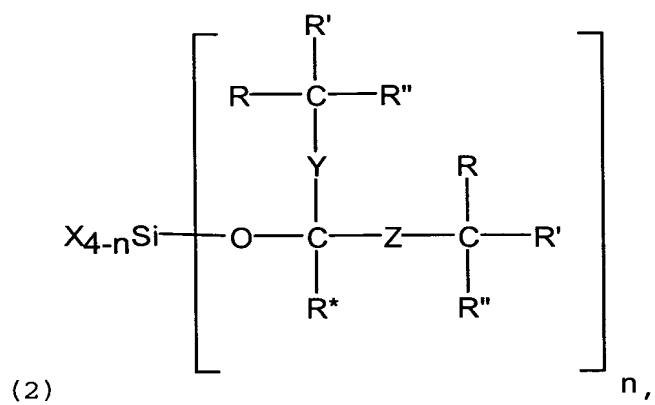


wherein n represents an integer.

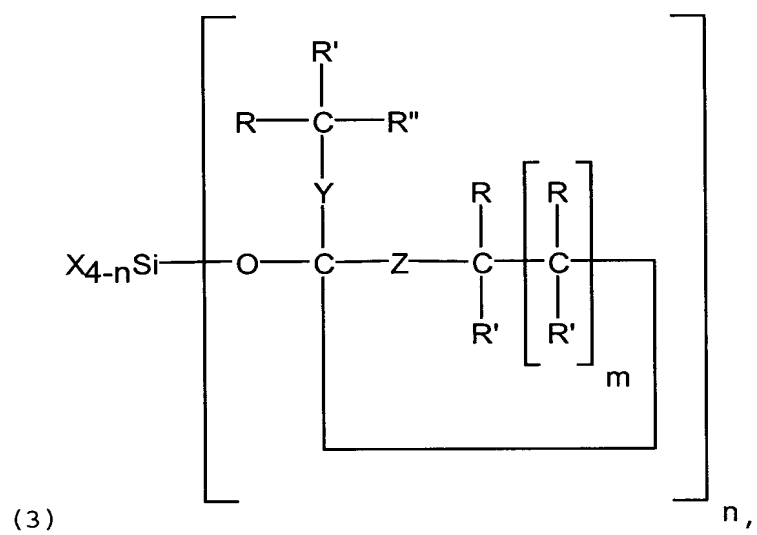
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3. A modified silane compound having a structural formula selected from the group consisting of:

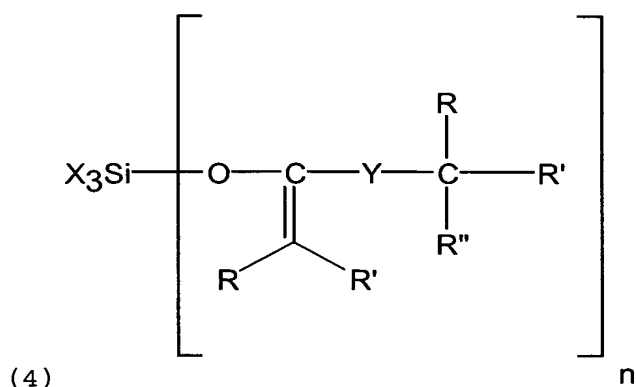




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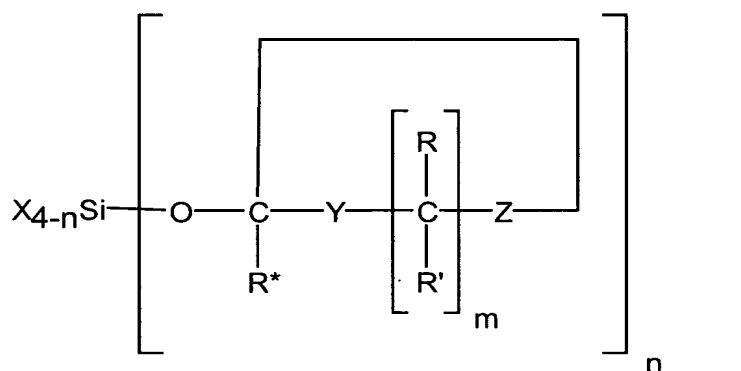
and



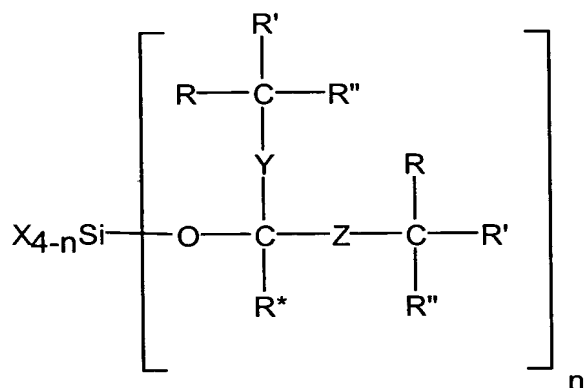
wherein n represents an integer from 2 to 4; wherein m represents an integer from 1 to about 20; with the proviso that m can represent the integer 0 for structures of formula (3) wherein Z represents the group C(R)R'; wherein X groups can be the same or different; wherein X represents a chemical moiety; with the proviso that X does not represent a methyl group, an ethyl group, or a phenyl group in cases where the modified silane compound is of structural formula (2) wherein n represents the integer 1 or the integer 2 wherein R\* represents a hydrogen atom wherein Y represents an oxygen atom wherein Z represents the moiety C(R)R'; wherein R, R', and R'' can be the same or different and are selected from the group consisting of hydrogen atoms, alkyl groups containing from 1 to about 12 carbon atoms, aryl groups containing from about 6 to about 18 carbon atoms, alkaryl groups containing from 7 to about 18 carbon atoms, alkoxy groups containing from 1 to about 18 carbon atoms, hydroxy groups, and halide atoms; wherein R\* is selected from the group consisting of hydrogen atoms, alkyl groups containing from 1 to about 12 carbon atoms, aryl groups containing from about 6 to about 18 carbon atoms, and alkaryl groups containing from 7 to about 18 carbon atoms; wherein R, R', R'', and R\* can be bonded together in any combination in cases where R, R', R'', and

R\* are not hydrogen atoms, halide atoms, or hydroxy groups; wherein Y represents a moiety selected from the group consisting of C(R)R', oxygen, sulfur, nitrogen, and phosphorus; wherein Z represents a moiety selected from the group consisting of C(R)R', oxygen, sulfur, nitrogen, and phosphorus; with the proviso that Y and Z can not both represent the moiety C(R)R'; wherein the contiguous cyclic ring in formulas (1) and (3) can contain heteroatoms selected from the group consisting of oxygen, sulfur, nitrogen, phosphorus, and silicon in cases where m represents an integer greater than 1; wherein the contiguous cyclic ring in formulas (1) and (3) can be saturated or unsaturated in cases where m represents an integer greater than 1; wherein said alkyl groups, aryl groups, alkaryl groups, and alkoxy groups can contain halide atoms and heteroatoms selected from the group consisting of oxygen, sulfur, nitrogen, phosphorus, and silicon.

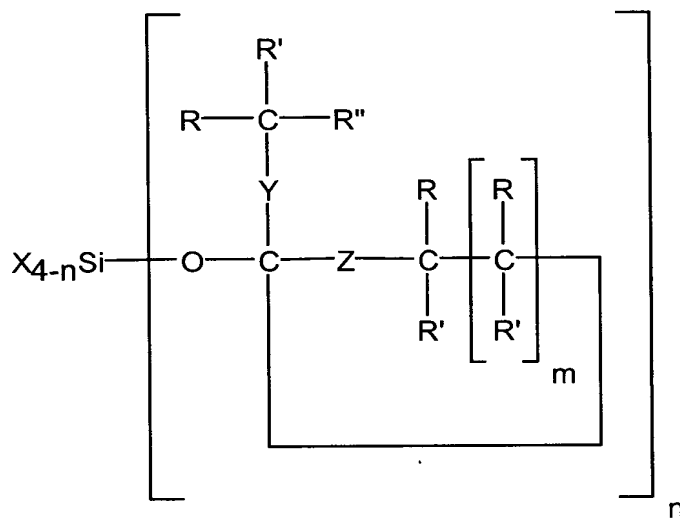
4. A modified silane compound as specified in claim 3 wherein the silane compound is of the structural formula:



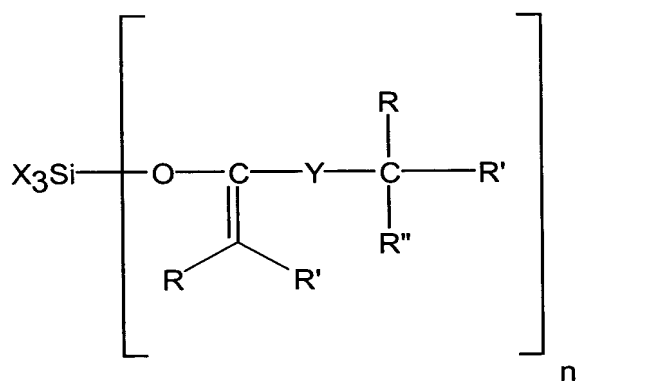
5. A modified silane compound as specified in claim 3 wherein the silane compound is of the structural formula:



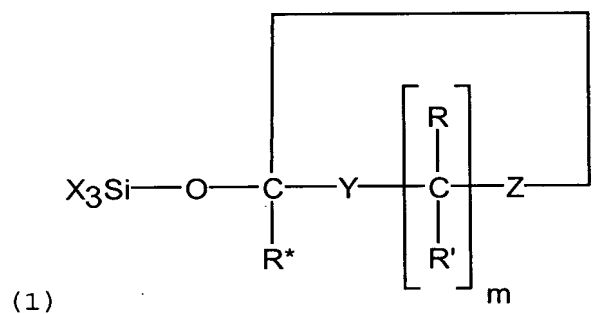
6. A modified silane compound as specified in claim  
5 3 wherein the silane compound is of the structural formula:



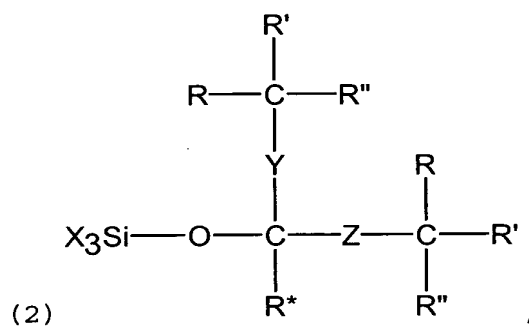
7. A modified silane compound as specified in claim  
10 3 wherein the silane compound is of the structural formula:



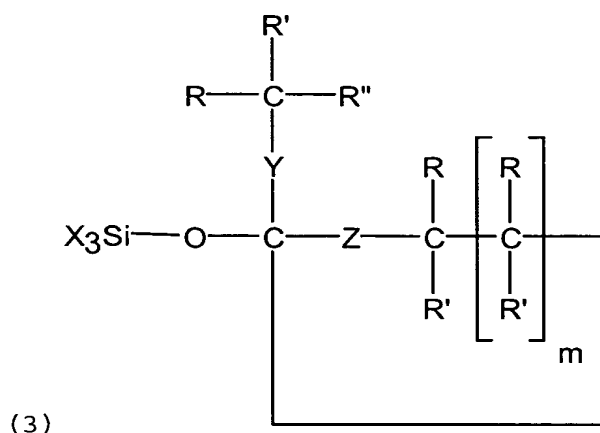
8. A modified silane compound as specified in claim  
1 wherein said modified silane compound is of the  
5 structural formula:



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and



wherein m represents an integer from 1 to about 20; with the proviso that m can represent the integer 0 for

5 structures of formula (3) wherein Z represents the group C(R)R' wherein X represents a chemical moiety other than a methyl group; wherein X groups can be the same or different; wherein X represents a chemical moiety other than a methyl, ethyl, butyl, or phenyl in cases where the

10 modified silane compound is of structural formula (1) wherein Y represents an oxygen atom wherein Z represents the moiety C(R)R' wherein m is equal to the integer 2 or the integer 3; wherein X represents a chemical moiety other than a methyl group, a tertiary butyl group, or a phenyl

15 group in cases where the modified silane compound is of structural formula (3) wherein Y represents an oxygen atom wherein Z represents the moiety C(R)R' wherein m is equal to the integer 3; wherein R, R', and R'' can be the same or different and are selected from the group consisting of

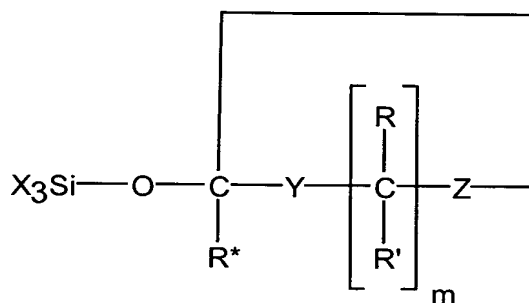
20 hydrogen atoms, alkyl groups containing from 1 to about 12 carbon atoms, aryl groups containing from about 6 to about 18 carbon atoms, alkaryl groups containing from 7 to about 18 carbon atoms, alkoxy groups containing from 1 to about 18 carbon atoms, hydroxy groups, and halide atoms; wherein

25 R\* is selected from the group consisting of hydrogen atoms,

alkyl groups containing from 1 to about 12 carbon atoms,  
aryl groups containing from about 6 to about 18 carbon  
atoms, and alkaryl groups containing from 7 to about 18  
carbon atoms; wherein R, R', R'', and R\* can be bonded  
5 together in any combination in cases where R, R', R'', and  
R\* are not hydrogen atoms, halide atoms, or hydroxy groups;  
wherein Y represents a moiety selected from the group  
consisting of C(R)R', oxygen, sulfur, nitrogen, and  
phosphorus; wherein Z represents a moiety selected from the  
10 group consisting of C(R)R', oxygen, sulfur, nitrogen, and  
phosphorus; with the proviso that Y and Z can not both  
represent the moiety C(R)R'; wherein the contiguous cyclic  
ring in formulas (1) and (3) may contain heteroatoms  
selected from the group consisting of oxygen, sulfur,  
15 nitrogen, phosphorus, and silicon in cases where m  
represents an integer greater than 1; wherein the  
contiguous cyclic ring in formulas (1) and (3) may be  
saturated or unsaturated in cases where m represents an  
integer greater than 1; wherein said alkyl groups, aryl  
20 groups, alkaryl groups, and alkoxy groups can contain  
halide atoms and heteroatoms selected from the group  
consisting of oxygen, sulfur, nitrogen, phosphorus, and  
silicon.

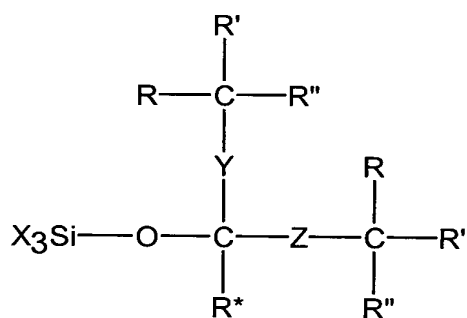
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8 wherein the silane compound is of the structural formula:





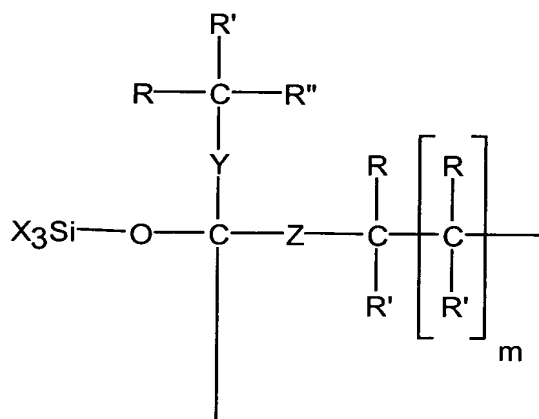
10. A modified silane compound as specified in claim 8 wherein the silane compound is of the structural formula:

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11. A modified silane compound as specified in claim 8 wherein the silane compound is of the structural formula:

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12. A modified silane compound as specified in claim

3 wherein at least one of the members selected from the  
group consisting of R, R', and R'' is a hydroxyl groups.

5 13. A modified silane compound as specified in claim  
4 wherein at least one of the members selected from the  
group consisting of R, R', and R'' is a hydroxyl groups.

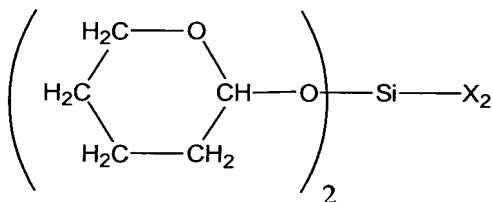
10 14. A modified silane compound as specified in claim  
6 wherein at least one of the members selected from the  
group consisting of R, R', and R'' is a hydroxyl groups.

15 15. A modified silane compound as specified in claim  
8 wherein at least one of the members selected from the  
group consisting of R, R', and R'' is a hydroxyl groups.

16. A modified silane compound as specified in claim  
9 wherein at least one of the members selected from the  
group consisting of R, R', and R'' is a hydroxyl groups.

20 17. A modified silane compound as specified in claim  
11 wherein at least one of the members selected from the  
group consisting of R, R', and R'' is a hydroxyl groups.

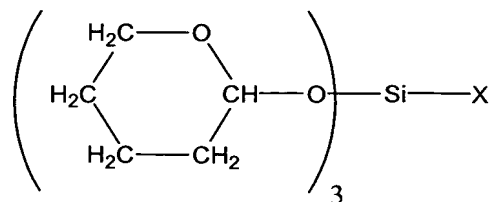
25 18. A modified silane compound as specified in claim  
3 wherein said modified silane compound is of the  
structural formula:



30 wherein X represents a chemical moiety.

19. A modified silane compound as specified in claim 3 wherein said modified silane compound is of the structural formula:

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wherein X represents a chemical moiety.

10 20. A modified silane compound as specified in claim 1 wherein said modified silane compound is of the structural formula:

